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SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LU, CHARLES EDWARD	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/623,621	SHIN, HYOSEOP
	Examiner Charles E. Lu	Art Unit 2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 November 2007.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 54-90 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 54-90 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. This Action is in response to the Remarks dated 11/15/2007. Claims 54-90 are pending and rejected.

Response to Arguments

35 USC 112, First Paragraph Rejection

2. **As to claim 90**, Applicant argues that a person skilled in the art would "immediately understand" that a string repository would not contain a string corresponding to the predetermined code, as claimed (Response, p. 3, para. 1). Applicant points out that the written description requirement does not mandate applicant to "describe exactly the subject matter claimed," but only that "the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed" (Response, p. 3, para. 3). Applicant further states that "since encoded values of the conventional XPath statements would be used 'instead of' the conventional XPath expression, a string for that conventional XPath statement would not appear in the string repository" (Response, p. 4, para. 1).

However, the examiner does not believe that this "clearly allows a person of ordinary skill in the art" to recognize that the inventor invented what is claimed. Merely "replacing" a string with a code value does not clearly allow one of ordinary skill to recognize that the inventor invented the claimed "a string repository that does not contain a string corresponding to the predetermined code value."

Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), aff'd mem., 738 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. MPEP 2173.05(i).

In this case, there is no basis in the specification for the negative limitation in the claim. The specification states in various locations that the location information is expressed as a predetermined code, but this does not support "the string repository not containing a string corresponding to the predetermined encoded value." Merely expressing location information as an encoded value does not necessitate that a corresponding string is not stored in the string repository. The specification is silent on string repositories not containing a string corresponding to the predetermined encoded value, and this is not a basis for a negative limitation.

Therefore, the previous 35 USC 112, first paragraph rejection is maintained.

35 USC 103(a) Rejection

3. Applicant's arguments were fully considered but were not persuasive.

Applicant argues that combining Evain with Kirk would "change the principle of operation" of the prior art (Remarks, p. 7, para. 2). The examiner respectfully disagrees.

The concept of Kirk used to modify Evain is merely the conventional concept of using a code to represent a string. For example, in Kirk, the code "1" is used to represent "Texas" (Prior Action, p. 6, para. 6). Evain does not expressly teach using a code to represent the claimed location information (Prior Action, p. 5, para. 5; location information are strings, p. 5, para. 7), but Evain does teach using codes in general, in lieu of other data (Prior Action, p. 5, para. 7). Since Kirk explicitly teaches using codes to represent strings, and Evain provides a foundation for using codes, it would have been obvious to modify Evain to represent the claimed location information using codes, as seen in Kirk. See the motivation in the Prior Action (p. 6). Thus, the principle of operation of Evain is not changed.

Therefore, the previous 35 USC 103(a) rejection is maintained.

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 90 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 90, the specification supports that the index structure is contained in a container, the container having a string repository, and a predetermined code value, but the specification does not support the string repository not containing a string corresponding to the predetermined code value (emphasis added).

Art rejection of the above claims is applied as best understood in light of the rejection under 35 U.S.C. 112 discussed above.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 54-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evain (XP002323574) provided by Applicant, in view of Kirk et al (U.S. Patent 6,823,329).

As to claim 54, Evain teaches the following subject matter:

(i) Index structure for metadata divided into fragments, the index structure contained in a computer readable storage medium (e.g., fig. 2-3, 1.1.1, 2.1.5, 2.2, 2.2.2, 2.2.4, 2.3);

A list of keys corresponding to fields of the metadata (2.2.2, 2.3.1.1, 2.3.2);

Location information for defining a key and locating and extracting a fragment of the metadata (see XPath section 2.3.1.1, 2.3.2, also see above).

Evain does not expressly teach,

(A) "wherein at least part of the location information defining the key is expressed as a predetermined code, the predetermined code being assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata."

However, Kirk teaches wherein a string is expressed as a predetermined code value (see e.g., col. 2, ll. 38-42, col. 10, ll. 14-21). The code value is assigned to the string according to a convention (e.g., 1=Texas, 2=Georgia, etc). The code is stored in lieu of the raw value (col. 10, ll. 23-25). This is done to increase performance (see e.g., col. 10, ll. 28-60).

The location information of Evain are strings, similar to Kirk's "Texas" and "Georgia." (see above). Moreover, Evain also supports using a code in lieu of other data (in table 4, a code value is provided in a descriptor field "encoding_type" instead of the "Description" itself).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Evain, such that a code would be stored (see Kirk) in lieu of the claimed location information string, and that a "descriptor" field(s) would be additionally provided for using the code(s) (similar to Evain's "encoding_type" above). Thus, the claimed subject matter would be implemented. The motivation would have been to increase performance, as taught by Kirk (e.g., col. 10, ll. 28-60). Another motivation would be to increase the speed of comparisons, since one of ordinary skill in

the art would recognize that in comparing values for equality in a computer, numeric comparisons (comparing the "codes") are typically faster than string comparisons.

As to claim 55, Evain as applied above further teaches wherein the location information comprises location information of a fragment including the key, and location information of the key within the fragment (see XPath section above and 2.3.2).

As to claim 56, the combination of Evain/Kirk above would teach or suggest wherein one of the location information of the fragment and the location information of the key is expressed as the predetermined code (see above discussion).

As to claim 57, the combination of Evain/Kirk above would further teach or suggest the code comprising additional information in a language for addressing parts of a markup language document (e.g., Evain's XPath), wherein the location of the fragments and key encoded as a predetermined code corresponds to a user defined type (see above).

As to claim 58, the combination of Evain/Kirk above would further teach or suggest one of the location information of the fragment and the location information of the key expressed as the predetermined code and one of the location information of the fragment and the location information of the key encoded in a language for addressing parts of a markup language document (see above).

As to claim 59, the combination of Evain/Kirk above would further teach or suggest providing values of the keys and identification information concerning the metadata corresponding to the values of the keys for locating and extracting a fragment

of the metadata (see e.g. Evain's use of the XPath above, and use of handles within the fragment structure, also see above).

As to claim 60, the combination of Evain/Kirk above would further teach or suggest a sub section comprising ranges of values of the key and identification information on ones of the fragments of metadata corresponding to the values of the key (e.g., Evain 2.3.4), and a section comprising representative key values representing the respective ranges of values of the key (Evain 2.3.3).

As to claim 61, the combination of Evain/Kirk above would further teach or suggest wherein the list includes identification information on the section, and identification information on the subsection (Evain, 2.3.2 – 2.3.4).

As to claim 62, the combination of Evain/Kirk above would further teach or suggest wherein each of the representative key values is a value among the corresponding range of values of the key (Evain, 2.3.2-2.3.4).

As to claim 63, Evain teaches the following claimed subject matter:

Limitation (i) addressed above;

a key index list section (fig. 2, 2.3.2) comprising a list of keys corresponding to fields of metadata and location information for defining the keys and extracting fragments of the metadata (see above, and sec. 2.2-2.4), a key index section (fig. 2, 2.3.3), and a sub key index section (fig. 2, 2.3.4);

Wherein for a key of the key index list:

The sub key index section comprises ranges of values of the key (2.3.3, 2.3.4) and identification information on ones of the fragments of the metadata corresponding to the values of the key (see table in 2.3.4, e.g., "target_handle", 2.2.2, 2.2.4);

The key index section comprises representative key values representing the respective ranges of values of the key (2.3.3). Also see above discussion of similar claimed subject matter.

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

As to claim 64, Evain as applied above further teaches wherein the location information comprises location information of a fragment including the keys, and location information of the keys within the fragment (see XPath section above and 2.3.2).

As to claim 65, Evain as applied above further teaches comprising a corresponding key index section and a corresponding sub key index section for another key of the key index list (2.3.2-2.3.4).

As to claim 66, Evain as applied above further teaches wherein the key index list section further comprises identification information on the key index section and the key index section further comprises identification information on the sub key index section (2.3.2 – 2.3.4).

As to claim 67, Evain teaches the following claimed subject matter:

Limitation (i) above;

A list of keys corresponding to fields of the metadata (2.2.2, 2.3.1.1, 2.3.2);

Location information for defining a keys (see XPath section 2.3.1.1, 2.3.2, also see above).

Values of the keys and identification information concerning the metadata corresponding to the values of the keys for locating and extracting a fragment of the metadata (see e.g. Evain's use of the XPath above, and use of handles within the fragment structure, also see above).

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

As to claim 68, Evain as applied above further teaches wherein the identification information comprises identification information on the fragments of the metadata corresponding to the values of the keys (e.g., 2.3, XPath, Key Index).

As to claim 69, Evain as applied above further teaches wherein the metadata has the structure of metadata as defined by the TV Anytime Forum (see e.g., Evain, introduction, 2.3.1.1, 2.3.5).

Claim 70 is drawn to substantially the same subject matter as claim 54, addressed above.

As to claim 71, Evain teaches the following claimed subject matter:

Limitation (i) addressed above, including "the index provided to search the metadata" (see throughout Evain);

Providing a key index list section (fig. 2, 2.3.2) comprising a list of keys corresponding to fields of metadata and location information for defining the keys and

locating and extracting a fragment of the metadata (see above, and sec. 2.2-2.4), a key index section (fig. 2, 2.3.3), and a sub key index section (fig. 2, 2.3.4);

Wherein for a key of the key index list:

The sub key index section comprises ranges of values of the key (2.3.3, 2.3.4) and identification information on ones of the fragments of the metadata corresponding to the values of the key (see table in 2.3.4, e.g., "target_handle", 2.2.2, 2.2.4);

The key index section comprises representative key values representing the respective ranges of values of the key (2.3.3). Also see above discussion of similar claimed subject matter.

Evain does not expressly teach (A) discussed above.

However, it would have been obvious to have (A). See above discussion.

Claim 72 is drawn to substantially the same subject matter as claim 67, addressed above.

As to claims 73, 75, 77, 79, 81, and 83, Evain further teaches wherein the location information to which the predetermined code is assigned corresponds to a path from a root node in the metadata to a metadata fragment containing the key (see Sec. 2.3.1.1).

As to claims 74, 76, 78, 80, 82, and 84, Evain further teaches wherein the location information is an XPath expression (e.g., see sec. 2.3.1.1).

As to claim 85, Evain teaches the claimed subject matter including:

Limitation (i) as discussed above;

As to “transmitted from provider to receiver”, see sec. 2.1.5, 2.3.1.1, 2.3.2, and note that the data has to be transmitted from a provider to a receiver for the system to be functional in a computing environment. See previous Action.

Evain does not expressly teach comprising a fragment type field containing an encoded value assigned to a standard fragment type specifying a location of the fragment, wherein the encoded value is assigned to the standard fragment type according to a convention for specifying standard fragment types and a key descriptor field containing location information specifying a location of a key for the index relative to the location of the fragment indicated by the fragment type field.

The above is drawn to substantially the same subject matter as (A) above. Also note that Evain already provides location information of the fragment and location information of the key relative to the fragment (see above), and both are string values. See above discussion for (A) for the reasoning and motivation to combine.

As such, Evain and Kirk teach the claimed subject matter.

As to claim 86, the combination of Evain/Kirk above has to assign the encoded value to the predefined string (assigning “1” to Texas”) prior to creating a container containing the index structure for transmission or else the use of the code would be meaningless.

As to claim 87, the combination of Evain/Kirk above would further teach or suggest wherein the predefined string specifying the fragment location is a path from a root node in the metadata to a metadata fragment containing the key (see Evain’s XPath 2.3.1.1).

As to claim 88, Evain as applied above further teaches the claimed subject matter (see XPath section above).

As to claim 89, Evain as applied above would have the structure of metadata as defined by the TV Anytime Forum (see e.g., introduction, 2.3.1.1, 2.3.5).

As to claim 90, Evain as applied above further teaches wherein the index is contained in a container, the container having a string repository (see fig. 2). The combination also teaches or suggests encoding the string for efficiency (see above).

Evain and Kirk do not expressly teach wherein the string repository does not contain a string corresponding to the encoded value.

However, one would not need to store a “Texas” string in the repository (a string corresponding to the encoded value), as claimed, because “Texas” is already understood as code “1”, and storing “Texas” in the string repository would be redundant (also see Kirk). In other words, if “Texas” were expressed as the number “1” (see Kirk), one would not need to store a “Texas” string in the string repository but the number “1” could be stored instead (also see discussion on “encoding_type” and Table 4 of Evain).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Evain and Kirk, such that the string repository does not contain a string (e.g., “Texas”) corresponding to the predetermined code (“1”). The motivation would have been to prevent redundancy and save storage space, as known to one of ordinary skill in the art.

Conclusion

Applicant's arguments were fully considered but were not persuasive.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached at (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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